Mental Nuts

Can you Crack 'em?

ILLUSTRATED

COMPLIMENTS OF

D. B. FRYMYER

Watchmaker and Jeweler

GROFF'S STORE, PA.

WALTHAM WATCHES

have received the highest awards at all of the great International Expositions wherever exhibited.

Philadelphia, 1876, 4 Medals
Paris, 1878, Gold Medal
Sydney, 1879, Gold Medal
Melbourne, 1880, Gold Medal
London, 1885, Gold Medal
Chicago, 1893, Medal and Diplomas

Mental Nuts

Can you Crack 'em?

A book of 100 Catch or Trick

PROBLEMS

Their simplicity invites attack, while their cunningly contrived relations call forth our best thought and reasoning

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REVISED 1900 EDITION

ILLUSTRATED

Waltham Watches have been made

Does this interest you?

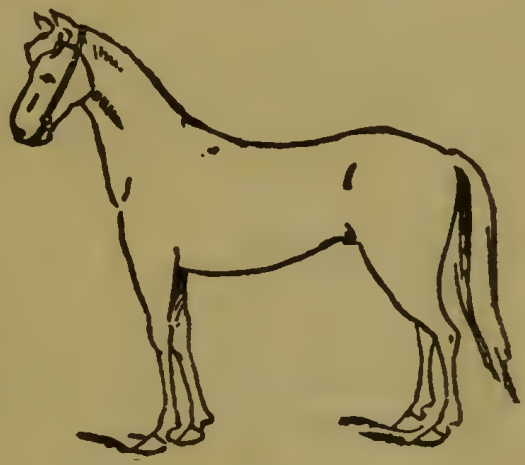
M. Favre Perret, International Juror from Switzerland at our Centennial Exhibition, in a speech to a convention of Swiss watchmakers, stated, in speaking of a "Riverside" Waltham Watch: "Not one Swiss watch in 50,000 compares with this."

Since this startling and unsolicited testimony was given, Waltham Watches have been improved in quality and lowered in price. Made only by the

American Waltham Watch Company

since 1854—nearly half a century

Solutions and Answers in back part of book.



1. The Horse Question.

A man sold a horse for $90, bought him back for $80, and resold him for $100. What did he make on the transaction?

2. The Shoe Question.

A boy bought a pair of shoes for $4.00 and gave a $10.00 bill in payment. The shoemaker had a neighbor change the bill, and gave the boy his change. The boy left the town with the shoes and the $6.00. The neighbor returned the bill, saying it was a counterfeit, and the shoemaker had to give him good money for it. What was his loss?

3. The Beggar.

A beggar had a brother, the brother died and the man who died had no brother.

4. The Farmers and Their Corn.

Three farmers, A, B, and C, met on their way to town. A had 50, B 30, and C 10 bushels of corn. They went to town and all sold their corn at the same prices, and, strange to relate, each one received the same amount of money for his corn. Why?

5. The Wine Casks.

Two men find in a cellar an eight-gallon cask full of wine, also an empty five-gallon and an empty three-gallon cask. They wish to measure out two lots of four gallons each. How can they do it?

6. Are They Similar? or

Which is the most? Six dozen dozen or a half a dozen dozen. Be quick!

7. The Chain Question.

A farmer brought five pieces of chain of three links each to a blacksmith, and asked the cost of making them into one piece of chain. The blacksmith replied, "I charge one cent to cut a link and one cent to weld a link." The farmer remarked that as it would require four cuts and four welds, the charge would be eight cents. "No," said the smith, "I figure it but six cents." How do you do it?

8. The Fox, Goose and Corn.

A farmer moving has a fox, a goose, and a basket of corn. He comes to a river and the boat will only carry the farmer and one of his charges. Now, if he leaves the fox and the goose alone, the fox will eat the goose, and if he leaves the goose and the corn alone, the goose will eat the corn. How can he safely take them all over the river?

9. A Puzzle on the Checkerboard.

Place eight checkers on a checkerboard so no two are in line horizontally, vertically or diagonally. Use white and black squares.

10. The Boy and the Ducks.

A boy, driving home some ducks, was asked how many he had. He replied, "When in line, there are two ducks ahead of a duck, two ducks behind a duck, and one duck in the middle." How many ducks had he?

11. The Man and His Money.

A man went to town and at the first store he spent one-half of his money and one-half of a cent more. At the second store he spent one-half of what he then had and one-half of a cent more At the third store he spent one-half of what he then had and one-half of a cent more. At the fourth store he spent one-half of what he then had and one-half of a cent more and had nothing remaining. How much had he?

12. The Animal Question.

A man has one hundred dollars and buys one hundred animals. He pays ten dollars for cows, three dollars for hogs, and fifty cents for sheep. How many of each did he buy?

13. The Ship's Crew.

A ship at sea has a crew of thirty men, fifteen white and fifteen colored. They run short of provisions and must throw one-half of the crew overboard, so the other half can live to get ashore. They decide to stand in a circle, and, beginning with the captain, count off, and every ninth man is to be thrown overboard, until one-half the crew is gone. How can they be stood so as to save the white men?

14. A Puzzling Question.

What is the third and a half of a third and a half of ten?

15. The Old Ladies and Their Apples.

A gentleman traveling, notices at the depot two old ladies selling apples. They each have 30 apples, one sells two for one cent, the other sells three for one cent. He says, "Now, if I buy one cent's worth from each I would get five apples for the two cents, so why not put all the apples in one basket and sell five for two cents." "No," said the ladies, "we would lose by it. She sells two for one cent and will receive for her 30 apples 15 cents. I sell three for one cent, and will receive for my 30 apples 10 cents. Together we would receive 25 cents for the 60 apples. But if we sold 60 apples, 5 for two cents, we would only receive 24 cents, or a loss of one cent" Where does the loss come in?

16. The Man in Jail.

A man in jail was asked who it was who visited him, and replied, "Brothers and sisters have I none, but that man's father is my father's son."

17. A Curious Number.

To write six figures will denote,
And of their magic here I quote,
"Can multiply by 1 2 3 4 5 or 6—it's queer—
But no new figures in results appear."

18. The Percentage Question.

I buy goods ninety per cent. off, and sell them at eighty and ten per cent. off. What is the per cent. profit?

19. The Lovers' Grove.

I am required to plant a grove
To please the lady whom I love.
This ample grove to be composed
Of nineteen trees in nine straight rows;
Five trees in each row I must place,
Or I shall never see her face.

20. The Man and the Stores.

A man goes to a store and says, "Give me as much as I have and I will spend ten cents with you." It is done, and the man repeats the operation to a second, and a third store, and has no money remaining. What did he start with?

21. The Water Cask.

A cask has three faucets. The first can empty it in one hour, the second can empty it in two hours, the third can empty it in three hours. How long will it take all three, running at one time, to empty it?

22. The Hunter and the Squirrel.

A hunter sees a squirrel on the trunk of a tree, and tries to shoot it. As fast as he moves around to get a good shot, the squirrel moves around also, and always keeps the tree between himself and the hunter; finally the hunter notices he has walked all the way around the tree. Did he go around the squirrel?

23. Your Age and Mine.

If to my age your age combine,
The sum would reach to 99.
To half my age add 1 ½ and see
Just what half your age will be;
Now half your age to half of mine
Would make ½ more than 49.
Your age and mine now I ask.
Pray, are you equal to the task?

24. The Frog in the Well.

A frog is at the bottom of a thirty foot well, and every time he jumps up three feet he falls back two. How many jumps will it require for the frog to get out?

25. The Heirs and the Sheep.

A man left nineteen sheep to three heirs. One to get one-half, one to get one-quarter, and one to get one-fifth. No sheep were to be killed, and all were to be dealt fairly with. How would you do it?

26. To Tell Day of Week Born.

What day of the week was March 20, 1886?

1st. 86, last two figures of date.
2d. ¼ of 86 21, (don't use fractions.)
3d. day of mo 20,
4th. Ratio Mar. 6, see table of Ratio.
5th. Total 133
6th. divide by 7) 133 — 19 and no remainder.

When no remainder, Saturday; 1 remains Sunday: 2 remains Monday, etc.

In leap years make ratio for January and February one less than in tables, and for the 20th century, add 5 before dividing by 7.

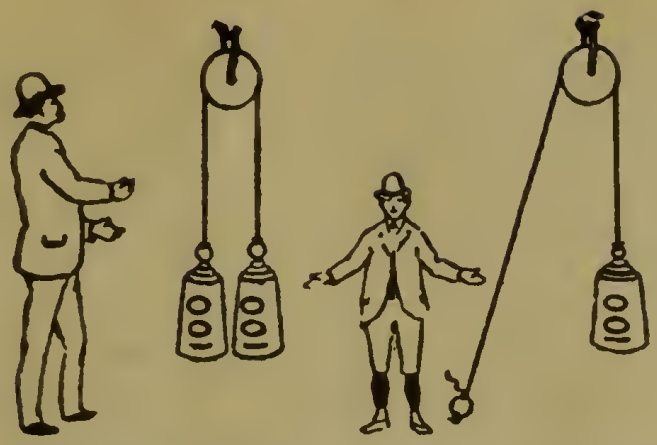
TABLE OF RATIO.

Jan.	3	May	4	Sept.	1
Feb.	6	June	0	Oct.	3
Mar.	6	July	2	Nov.	6
Apr.	2	Aug.	5	Dec.	1

27. The Leaking Ship.

A ship at sea strikes a rock and knocks a hole in the bottom 9 x 16 inches. The ship's carpenter has a piece of board one foot square. How can he cut it into two pieces so they will exactly fit the hole?

the means of every one



28. The Pulleys and the Weights.

In a mill there was a pulley, and a rope passed over it with a hundred pound weight at each end of the rope. A boy came and said one of the weights was wanted in another part of the mill, but the man in charge said he could not spare it, as he had to have the two hundred pounds weight on the pulley. The boy said it would be the same to take off a weight and tie that end of the rope to a ring in the floor. "Certainly not," said the man. "I am sure it would," said the boy. Now, who was right?

29. The Farmer and His Horses.

A farmer goes to four county fairs with his drove of horses. He gives a horse to enter the fair, sells one-half of the remainder in the fair, and gives one horse to get out. He repeats the operation at each of the other fairs, and has but one horse to go home on. How many horses did he start out with?

30. How Many Dollars.

I am the father of seven married sons.
Beginning with my number one,
A gift of dollars I do bequest;
His wife to have one-ninth the rest.
And thus I carry out my aim,
Each son $1.00 more than son just named;
And for the wife's share each time
Divide the remainder by the figure 9.
And so it goes, as I said before,
Until there isn't anything more.
And now to set the question right,
I'll state each family received alike.

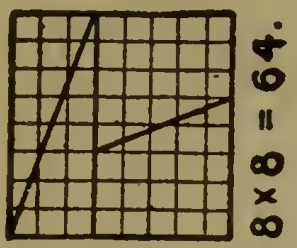
31. Poetical Thought.

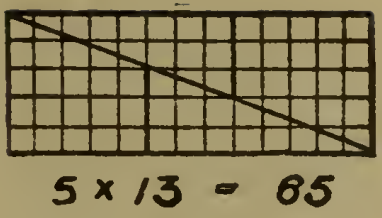
Can you supply the seven words omitted? They must all be formed of the same six letters.

A —— sat in his —— gray,
Watching the moonbeams —— play,
On a keg that in the bushes lay.
And the leaves with their —— took up the song,
Thou——the brave. Thou——the strong.
To thee doth —— of great battles belong
John Barleycorn, my king.

32. Equal Cost and Per Cent.

A man sold a horse for fifty-six dollars. The number of dollars the horse cost is the same as the number of per cent. profit. What was the cost?





33. Four Peculiar Drawings.

In square, 64; in parallelogram, 65. Why?

34. Speaking of Euchre.

Which card is never turned up trump?

35. Wonderful.

Suppose in the year 1 one cent had been deposited in bank bearing 4 per cent. interest, compounded every time interest equaled principal. State amount in year 1900.

36. The Wheel.

Does the top go faster than the bottom?

37. The Cow and Horse.

What is the difference in their getting up?

38. The Cog Wheels.

Suppose two equal cog wheels or coins (one stationary), how many turns will the other make revolving around it?

39. Father and Child.

Father is six times the age of child. In 24 years the child will be one-half his age.

40. The Building Lot.

Have a lot 50 x 100. Want to build a house 50 x 100 and have yard same size. How?

41. Hands on Clock.

At 12 o'clock the hour and minute hands are together. When will it next occur?

42. The Fish Question.

A fish is fifteen inches long, the head is as long as the tail. If the head was twice as long, the head and tail would be as long as the body. How long is each?

43. A Trick Question.

A gave Forty five dollars for a horse and sold him for fifty-four dollars. What per cent. profit did he make?

44. The Horses.

I sell two horses at $1,500 each; on one I gain twenty-five per cent., and on the other I lose twenty-five per cent. What do I make or lose on the transaction?

45. To Find the Number Thought of.

Think of a number, say	20
Double it	40
Add 1	41
Multiply by 5	205
Add 5	210
Multiply by 10	2100
Subtract 100	2000
Strike off the last two figures and it leaves the number thought of	20

you will have correct time

46. The Fox and the Hound.

A fox is sixty leaps ahead of a hound; the hound takes six leaps while the fox takes nine, but three of the hound's leaps are equal to seven of the fox's leaps. How far will the fox go before he is overtaken, and how many leaps will the hound take?

47. The Cats and Rats.

If three cats can catch three rats in three minutes, how many cats can catch one hundred rats in one hundred minutes?

48. The Herring.

If a herring and a half cost a cent and a half, what would a dozen and a half cost?

49. Discounts.

A merchant buying a bill of goods is offered his choice of 20, 10, and 5 per cent. discount, or 5, 10, and 20 per cent. discount. Which is best?

50. A Puzzling Laundry Sign.

When collars six and seven cuffs there be,
Then we'll charge you thirty-three.
For collars seven and six cuffs to do,
Our usual charge is thirty-two;
You'll find the prices very cheap.
Pray you, figure out the cost of each.

The Waltham factory is the largest

51. When Will We Three Meet Again.

Three bicycle riders start together to race around a one mile circular track. The first can go the mile in two and one-half minutes; the second in two and three-fifth minutes, and the third in three and one-fourth minutes. How soon will they all be together again at the starting point?

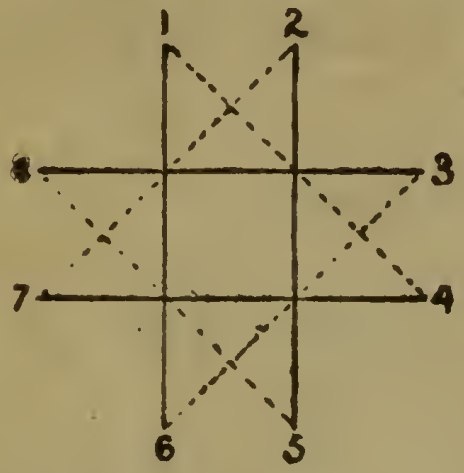
52. The Lady and the Eggs.

A lady walking to town with a basket of eggs was run into by a gentleman driving by. The lady fell and broke all the eggs. The gentleman apologized and offered to pay for the eggs, asking how many she had. The lady replied, "When counted two, three, four, five, or six at a time, always one remained, but if counted seven at a time they came out even" How many had she?

53. Farmer and His Apples.

A farmer has one hundred barrels of apples, and writes to the city merchant to know his best offer. The merchant replies, "I will give you two dollars per barrel, or one dollar and seventy-five cents and the empty barrels." The farmer can buy empty barrels at home for twenty-five cents, and the freight from the city is twenty-five cents per barrel. Which is his best plan to sell?

watch factory in the world



54. A Little Puzzle.

Move on a straight line from one number to another. Mark the number you move to; don't start twice from any number. The idea is to mark seven numbers.

55. Digging the Ditch.

A and B agree to dig a ditch one hundred feet long for one hundred dollars. They are each to receive fifty dollars. They begin to dig at opposite ends, and it is noticed that A's end is the harder to dig, so they agree that he shall receive 25c. more per foot than B. How many feet will each dig, and what price per foot will each receive?

56. The Board Question.

I have a board which is ten feet long, and six inches wide at one end, and twelve inches wide at the other. I wish to divide it into two equal pieces. How far from the small end must I cut it?

57. The Bottle and the Cork.

A bottle and a cork cost $1.10; the bottle cost $1.00 more than the cork. What did each cost?

58. Can You Read It?

o

B e D

59. A Nut to Crack.

I have a plot of land 13 rods square, and wish to divide it into least number of pieces of one or more rods square each.

60. The Farmers and Their Land.

Two farmers, A and B, have adjoining farms. A says to B, "Give me seven acres and our farms will be equal." B replies, "You give me seven acres and my farm will be twice the size of yours." How many acres has each?

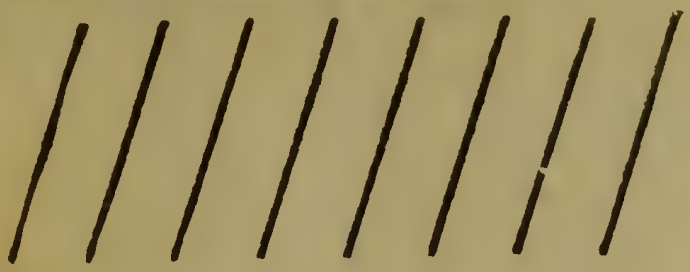
61. Brevity in Letter Writing.

Mr. George,
Brook, Pa.
Dear Sir:
Stand take to takings and me
I that you throw my awe those
Yours, etc.,
Geo. Wood,
Washington,
Mass.

62. A Question of Time.

One-half the time past noon is equal to the time to midnight. What is the time?

Watches are now in use



63. Toothpicks.

Jump two at a time and have four piles of two each. No pick to jump twice.

64. A Question of Arrangement.

Arrange the nine digits so as to count first, 15; second, 20; and third, 27 every way.

65. Thirty-four Every Way.

Arrange the figures 1 to 16, inclusive, in a square so as to count thirty-four every way.

66. Sixty-five Every Way.

Arrange the figures 1 to 25, inclusive, in a square so as to count sixty-five every way.

67. Coffee Roasting.

I buy green coffee at 25 cents per pound, pay ½ cent per pound for roasting, and it shrinks 15%. What price per pound must I sell at to clear 16⅔% profit?

68. The Kings and the Pears.

Eleven pairs were hanging high,
Eleven kings came riding by;
Each king took a pear,
And still there were eleven there.

69. Which Weighs the Most?

A pound of feathers or a pound of gold.

70. Our Ages and 33.

Just as much below mine,
As is high above thine.
To your age add ⅔ more and see
What ½ mine then will be;
And lest it leaves you in a fix,
I'll state the sum is sixty-six.

71. The Suit of Clothes.

The coat cost as much as the pants and vest; the coat and two pair of pants cost $52.50. The pants and two vests cost $30.00. Find the cost of the suit.

72. The Grocer's Weights.

What four weights will weigh any amount in pounds or half pounds from ½ pound to 20 pounds?

73. Dividing the Land.

A farmer died, leaving his four children two pieces of land as above. They are to divide each of them into four similar pieces.

74. The King and the Horse-shoer.

A king called on a blacksmith to get his horse shod, and they disagreed about the price Finally the smith said he would take one cent for the first nail, two for the second, four for the third, and so on. What would it cost the king?

a Waltham Watch

75. The Horses and Saddle.

A man bought three horses and a saddle for $220. If he puts the saddle on the first horse, they cost as much as the other two horses. If he puts the saddle on the second horse, they cost two times as much as the first and third; and if he puts the saddle on the third horse, they cost three times as much as the first and second. Find the cost of each.

76. Suppose.

Suppose the one-fourth of twenty was three, what would the one-third of ten be?

77. A Good Study.

Draw in line seven circles; place three black papers at one end, and three white at other; move forward only. Jump one at a time; have them exchange places.

78. The Tree and the Storm.

A tree one hundred feet high is broken by a storm; the top bends down touching the ground thirty feet from the base. Where did it break?

79. Inscription Over Fireplace.

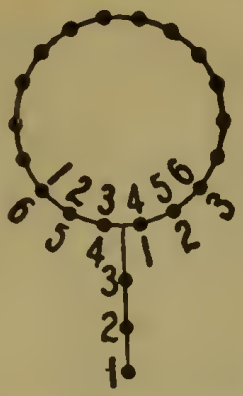
If the B . putting:
If the B Mt put: Can you read it?

The American Waltham Watch Company

guarantees every watch-movement it turns out against any defect in material or construction. That guarantee holds good the world over.

The American Waltham Watch Company is the first American company; the first to be organized (nearly half a century ago), and the first at the present time in the quality and volume of its product. Waltham watches are all good time-keepers—some of them better suited for one class of service, some for another.

will wear a lifetime



81. A Little Puzzle.
Begin at end of stem, count to left of circle; go back same number in circle only. You last stopped as many dots to right of stem as dots in stem.

82. The Plow Boy.
A boy plowing in a field was asked by a gentleman driving by how many acres were in the field. The boy, being mathematically inclined, replied, "The field is square. I have plowed just one rod wide around the field, and just one-half the field is plowed." How many acres in the field?

83. Ships at Sea.
Two ships opposite, 90 miles apart, one sails north 4, other northwest 5 miles per hour. Will sail how far before meeting?

84. Triangles.
Find area of triangle; base is 40, sides 20.

85. The Three Dice.
What is the chance of naming triplets?

86. The Pole in Swamp
Is 90 feet long, twice as deep in water as in mud, and twice as much in air as mud and water. How much in each?

87. The Farm Question.

A gentleman bought a farm of 300 acres for $300. He paid 75 cents, $1.00 and $1.25 per acre respectively for meadow, timber and plow land, an equal sum being invested in each variety. How many acres of each should he get?

88. A West Pointer.

A column of troops twenty-five miles long are on the march; a courier at the rear of the line is ordered to deliver a dispatch at the head of the column and return to the rear. He does so, and notices he joins the rear at a point exactly where the head of the column was when he started. How far did he travel?

89. Where is the Day Lost.

Suppose we leave San Francisco, Cal., at sunrise on January 1st and cross the Pacific Ocean fast enough so as to have sunrise all the way over to Pekin, China, where it is sunrise Jan. 2d. How do you account for it?

90. Sound, Sight or Bullet.

Three men on the bank of a river argue who first knew of the discharge of a rifle on the opposite side. No. 1 heard the report; No. 2 saw the smoke of the discharge, and No. 3 saw the bullet strike in the river at his feet.

91. Cruiser and Merchantman.

The Cruiser Columbia is 15 miles and 827 feet astern of a merchantman, and steams one knot while the latter steams one mile. How many knots wil the cruiser steam to overtake the merchantman ?

92. Is one equal to two?

Let $a = x$

$\therefore ax = x^2$

Subtracting a^2 from both.

$ax - a^2 = x^2 - a^2$

Factoring.

$a(x - a) = (x - a)(x + a)$

Dividing by $(x - a)$

$a = x + a$

$x = a$

Hence, $a = 2a$ or $1 = 2$.

93. The Boy and His Sled.

A boy on a sled, at the top of a hill three hundred feet long, slides down and runs half as far up another hi l. He sways back and forth, each time going one-half as far as he came. How far will he have traveled by the time he comes to a halt?

94. The Lightning.

We see the lightning and five seconds later hear the thunder. How far off was it?

95. The Livery Team.

I hire a team to drive to a city twelve miles distant, and return for $4.00. At a cross roads, six miles distant, I take a passenger to the city and back to the cross roads. What should he pay?

96. A Whopper.

Suppose the earth was a pin cushion. How many pins could be stuck in it?

97. The Partnership.

James has 5 sandwiches, and William has 3; they sit down to eat, and are joined by a stranger who shares equally with them and pays 8 cents for his repast. How should the money be divided?

98. One in Addition.

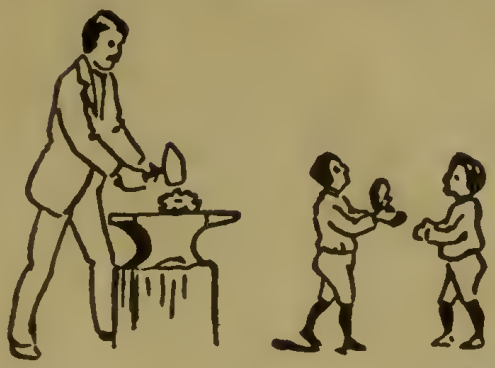
Place the figures 1 2 3 4 5 6 7 8 9 0 to add 100.

99. The Boys and Their Papers.

If A gives B one, they'll have equal. If B gives A one, he'll have half A's number.

100. What is it?

Three-fourths of a cross, a circle complete,
Two semicircles one perpendicular meet;
A triangle next, stands on its two feet,
Two semicircles and a circle complete.



Cracking Mental Nuts.

1. $20; had $90 at first, $110 at last.

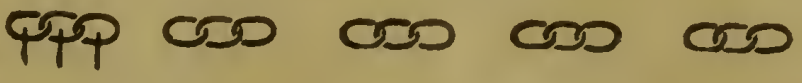
2. $6 and shoes; received and paid $10 for the bill, so that balances.

3. The beggar was a woman.

4. Sell 49, 28 and 7 bushels at rate of 7 for $1; then 1, 2 and 3 bushels at $3 per bushel; hence each one receives $10.

5. Fill the 5 out of the 8 and the 3 out of the 5; empty the 3 into the 8, pour the 2 in the 5, into the 3, fill the 5 out of the 8; then from 5 fill the 3, which only requires 1, leaving 4 in the 5; empty the 3 into 8 and have 4 there.

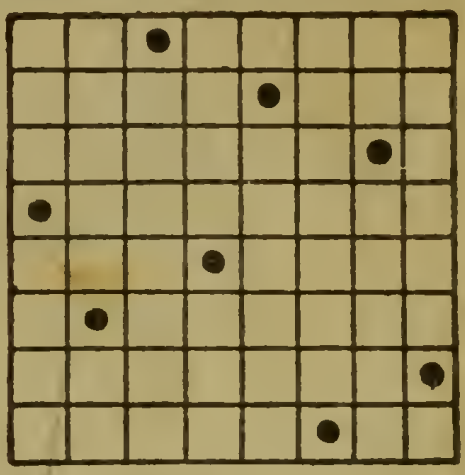
6. No; one is 72, the other 864.

7. 

   Cut first three links; use one at each joint.

8. Take goose over, return and take fox over, bring goose back, take corn over, return for goose.

9. - - - -

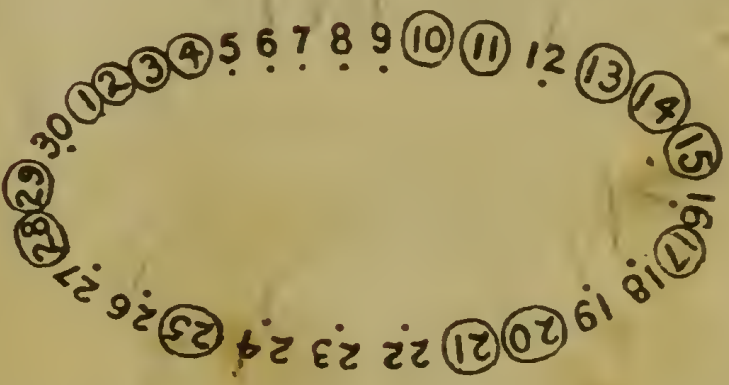


10. Three.

11. 15 cents.

12. 5 cows, 1 hog,
94 sheep.

13.



Those in rings, white; No. 1, the captain.

14. $2\frac{1}{2}$.

15. One had 10, other 15 cts. worth; 2 for 5 equals 12 cts. each; one loses 3, other gains 2 cts.; together they lose one cent.

16. A son visited his father.

17. 142, 857.

18. 80 per cent.

19. - - - - - -

20. $8\frac{3}{4}$ cents.

21. $\frac{6}{11}$ hour.

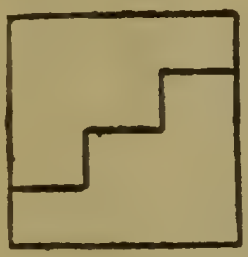
22. No, he did not.

carried all over the world

23. 48 and 51.

24. 28. He goes out last jump.

25. Borrow 1 sheep; give 10, 5 and 4; return 1.

27. 

28. The boy was right. **29.** 61 horses.

30. $56. [result.

31. Sutler, ulster, luster, rustle, lurest, rulest,

32. $40. [ogram.

33. Scant squares on diagonal line of parallel-

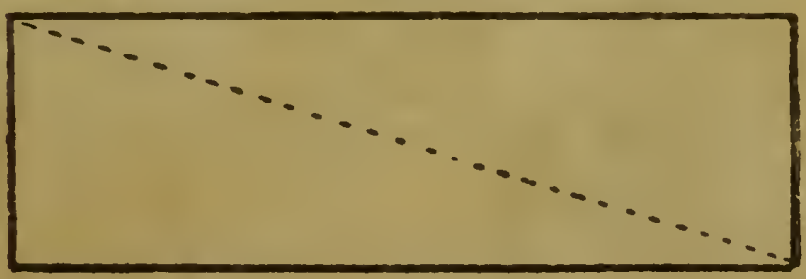
34. The left bower.

35. $377,789,318,629,571,617,095.68.

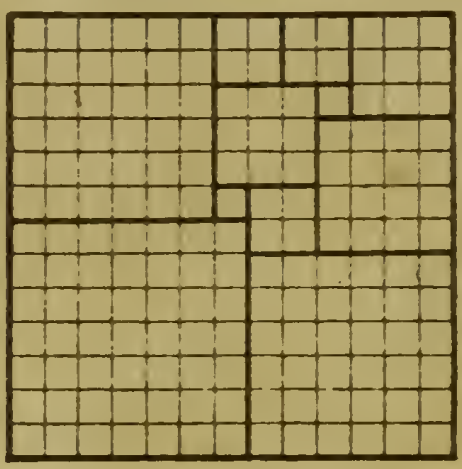
36. Turning on ground, yes; on shaft, no.

37. Cow, hind legs; horse, front legs first.

38. Two full turns. **39.** 6 and 36.

40. 

41. 5 min. 27 $\frac{12}{41}$ sec. past 1 o'clock.
42. 3, 3, 9.
43. 980 per cent. Man's name was Forty.
44. Loss, $200.
46. Fox, 168; h., 72.
47. The same three cats.
48. 18 cents.
49. They are equal.
50. Collars, 2; cuffs, 3.
51. 65 minutes.
52. 301 eggs.
53. The $2.00 per barrrel offer.
54. 3-8, 6-3, 1-6, 4-1, 7-4, 2-7, 5-2.
55. A 43,84472 @ 114,03882 = 50.
B 56,15528 @ 89,03882 = 50.
56. 5.811425 feet.
57. $1.05 and .05.
58. A little dark-e in bed, nothing over him.
59.



60. 35 and 49 acres respectively.
61. Mr. George,
Overbrook, Pa.
Dear Sir:—I understand that you undertake to overthrow my undertakings and overawe those under me. Yours etc.,
George Washington Underwood, .
Andover, Mass.
62. 8 o'clock.

63. Put 5 on 2, 3 on 7, 1 on 4, and 6 on 8.

64.

8	1	6		5
3	5	7	3	7
4	9	2	4	6
			8 1 9 2	

				5
				4
3	6	9	7	2
				8
				1

65.

1	15	14	4
8	10	11	5
12	6	7	9
13	3	2	16

66.

17	24	1	8	15
23	5	7	14	16
4	6	13	20	22
10	12	19	21	3
11	18	25	2	9

67. 35 cents.

68. 11 pairs equal 22 pears; take 11 pears away, 11 pears remain. (Notice spelling.)

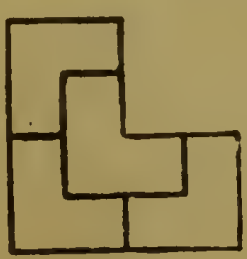
69. Feathers, 7000 grains; gold, 5760.

70. 18 and 48.

71. $45.

72. ½, 1½, 4½, 13½.

73.



74. $42,949,672.95.

75. Saddle, $100\frac{15}{18}$; first horse, $9\frac{3}{18}$; second horse, $45\frac{15}{18}$; and the third horse, $64\frac{3}{18}$.

76. It would be 2.

77. Move B W W B B B W W W B B B W W B

78. $45\frac{1}{2}$ feet.

79. If the great B full, stop puttiug coal on; If the great B empty, put coal on.
B (great b) . (full stop) : (colon)

80. Dec. 31st, 12 P. M., 1900.

82. $\frac{12}{4}\frac{6}{3}\frac{0}{5}\frac{4}{0}$ of an acre. 83. 120, 150.

84. No area; only forms two lines.

85. 1 in 216. To throw triplets is 1 in 36.

86. 10, 20 and 60 feet respectively.

87. Impossible; $100 each equals $313\frac{1}{3}$ acres.

88. 60 miles and 1876 feet.

89. New day begins at 180th meridian, which is midway in the Pacific Ocean.

90. No. 2, No. 3, and No. 1, respectively.

91. 100 knots. 6080.27 ft., U. S. N. knot.

92. Never. 93. 900 feet. 94. 5710 ft.

95. $1.00: they share equally half the trip.

96. 115,006,696,611,840,000,000 pins.

97. 1 and 7.

98. $50\frac{1}{2}$ and $49\frac{1}{2}$ placed under it.

99. A, 7; B, 5. 100. TOBACCO

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